

What is claimed is:

1. A duplexer having an antenna terminal, a transmit terminal and a receive terminal, comprising:

5 a transmit filter connected between said antenna terminal and said transmit terminal; and

 a splitter circuit and a receive filter connected in series between said antenna terminal and said receive terminal,

10 said splitter circuit including at least one phaseline connected between said antenna terminal and said receive filter and at least one resonator connected in parallel with said phaseline.

15 2. The duplexer as claimed in claim 1, wherein said splitter circuit further includes a first inductor connected between one end of said phaseline and one end of said resonator and a second inductor connected between the other end of said phaseline and the other end of said
20 resonator.

 3. The duplexer as claimed in claim 1, wherein said resonance frequency and antiresonance frequency of said resonator are lower than a passband of said transmit
25 filter.

 4. The duplexer as claimed in claim 2, wherein said resonance frequency and antiresonance frequency of said resonator are lower than a passband of said transmit
30 filter.

5. The duplexer as claimed in claim 1, wherein said resonance frequency and antiresonance frequency of said resonator are higher than a passband of said receive
5 filter.

6. The duplexer as claimed in claim 2, wherein said resonance frequency and antiresonance frequency of said resonator are higher than a passband of said receive
10 filter.

7. The duplexer as claimed in claim 1, wherein said at least one phaseline includes a first phaseline with one end connected to said antenna terminal and a second
15 phaseline with one end connected to said receive filter, and said at least one resonator includes a first resonator connected in parallel with said first phaseline and a second resonator connected in parallel with said second phaseline.

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8. The duplexer as claimed in claim 7, wherein said splitter circuit further includes a first inductor connected between said one end of said first phaseline and one end of said first resonator, a second inductor
25 connected between the other end of said first phaseline and the other end of said first resonator, a third inductor connected between said one end of said second phaseline and one end of said second resonator, and a fourth inductor connected between the other end of said second phaseline
30 and the other end of said second resonator.

9. The duplexer as claimed in claim 8, wherein said at least one resonator further includes a third resonator connected between a ground and a point of connection
5 between said second inductor and said fourth inductor.

10. The duplexer as claimed in claim 9, wherein said resonance frequencies of said first and second resonators are lower than an antiresonance frequency of said third resonator.
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11. The duplexer as claimed in claim 9, wherein an effective coupling coefficient of said third resonator is less than an effective coupling coefficients of said first and second resonators.
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12. The duplexer as claimed in claim 10, wherein an effective coupling coefficient of said third resonator is less than an effective coupling coefficients of said first and second resonators.
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13. The duplexer as claimed in claim 1, wherein said resonator is constituted of a film bulk acoustic resonator.
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